



Application Management: Clarifying the Definition

Integration & Development Strategies, Operations Strategies

Glenn O'Donnell

Application management (AM) is a fundamental function within almost all IT organizations, though the actual definition of AM varies. It often is defined as being (myopically) centered on a given organizational entity, whereas the proper view spans the entire IT organization, including business users, application development, operations, outsourcing, and infrastructure development. All IT parties must view applications as proxies of business services and strive for optimization of these services via robust and structured AM efforts.

Various segments of the IT organization frequently view application management according to their own historical experiences (e.g., developers focus on transforming requirements into usable software, operations groups focus on performance and availability). The true definition of AM lies in the entire life cycle of the application, encompassing conception to end-of-life and all iterations in between (see Figure 1). Most importantly, good AM mandates the preservation of knowledge throughout the life cycle. Information used to define the application is useful for the operations team, yet this information is rarely passed on beyond the development stage. Just as engineering discipline is compulsory in other complex systems to prevent catastrophic failure (e.g., bridges, skyscrapers, aeronautics), the IT organization (ITO) must infuse stronger discipline into all its endeavors. Therefore, proven engineering practices must be used. As the complexity of IT applications and services inexorably grows, the need for discipline has become critical.

Some elements of AM are already popular, with software configuration management (e.g., software distribution) now common in 20% of ITOs and application performance monitoring common in 50% of ITOs. Structured processes with good quality assurance in the development stage are even more pervasive, but optimizing any single stage is insufficient. Development and operations groups each have at least a moderate degree of sophistication, but they often coexist in a contentious atmosphere. Through years of misdirected cultural evolution, they have developed a barrier that must be dismantled to attain success, since future efficiency and accountability requirements will grow even more demanding. Other equally important entities such as infrastructure development and architecture must also be included in this coalition, to ensure the pursuit of a common goal of optimum business value. Similar barriers also exist with these entities, and those barriers must also be eliminated.

This broad partnership across IT groups is essential for successful and complete application management. Yet engrained culture will make this quest difficult. Only 5% of ITOs can currently claim strong synergy between organizational entities for AM. A welcome new emphasis on overall process maturity, driven by demands for discipline and cost containment, will expand this enlightened set of ITOs to 20% by 2006 and to 60% by 2008. These figures assume the ITO remains a viable internal function. Outsourcing, along with an emerging and growing maturity gap (see Delta 2739) will complicate this mix. Most ITOs that choose to outsource should actually experience an improvement in AM capability, but AM will become more complicated with any increase in outsource partners.

The application has become the center of adaptive organization initiatives, due to its being the most tangible business service that can be easily and directly measured. Use of the application's behavior as a critical focal point of IT services more easily demonstrates business value and provides a suitable gauge to determine whether an adaptive change is needed to the underlying infrastructure or to the application itself. Basing these decisions solely on infrastructure behavior is insufficient.

META Trend: Through 2008, IT operations groups seeking to effectively develop and enhance their operational processes will formalize their efforts, focusing on process definitions, performance measurement, and analysis of potential refinements — ultimately creating a culture that embraces continuous improvement. Although most IT operations groups' efforts are still in their infancy, significant gains will be made by leveraging the process refinement practices experienced by both IT (e.g., ITIL) and non-IT oriented (e.g., Six Sigma) organizations.

The focus of management efforts is migrating from infrastructure to applications. Infrastructure monitoring is rapidly commoditizing, yet despite its importance to ongoing operations, it offers little direct relevance to business services. Management vendors (e.g., BMC, CA, Compuware, HP OpenView, IBM Tivoli, Quest, Veritas) now prominently feature their transitions in this direction. All are building more powerful application management into their portfolios. Some other vendors have been rooted in the application perspective from their very inception (e.g., Mercury, Empirix, Wily).

Application performance management (APM) is a prominent facet of AM, though it is more accurately defined as “monitoring” rather than “management,” which implies more action taken to optimize behavior. APM is growing rapidly. The 40% CAGR in 2002-04 will continue unabated and even accelerate through 2010. The APM market is sustainable, since continued application evolution and complexity will require additional technology procurement to maintain parity with this change. To be truly powerful, however, APM products must encompass more real management (e.g., configuration management, administration) and cover a broader range across the life cycle.

APM is migrating from basic response monitoring to improved automated diagnostics based on technology relationship maps (TRMs). The TRM captures application components (hardware and software) and more importantly, the relationships between these components (see SMS Delta 1146). Although dozens of vendors offer simpler response monitoring, few provide the deeper analysis that leverages these TRM details. This TRM-based analysis is already becoming the target of significant expansion by vendors.

Technology relationship mapping is extremely useful in decomposing IT services into their underlying details. This compositional mapping is one of the most important basic requirements to automating services. The application often offers a close approximation to services in this context. Therefore, AM vendors are beginning to invest in technologies that help peer inside the application and collect the relevant application components and relationships (e.g., Mercury’s acquisition of Appilog). All major management vendors will follow, usually by acquiring other emerging application configuration vendors. Vendors such as Relicore, Collation, Cendura, and Trous have proven attractive in this role and are likely targets for these acquisitions. The TRM will also be used more prominently outside of operations to guide development, architecture, and infrastructure.

Although ownership of AM is fragmented within the organization and will continue to be so, many initiatives are owned by the application development groups. Clarified ownership of the full life-cycle process is essential, since ambiguous or absent ownership will perpetuate the cultural bitterness that currently characterizes most organizations. The main goal of ownership is to identify a single point of coordination and accountability for the applications. This development-centric model reflects engineering best practices, since ongoing technical ownership of any engineering project is usually retained by the original design or development team.

However, the most effective model in all cases is to build a dedicated, centralized AM team. This group has responsibility for application life-cycle flow and orchestrates the interactions of application development, operations, and infrastructure development. The role of application manager is emerging to serve as this single point of accountability, but it rarely dictates the development process itself. We expect more ITOs to adopt this role as a formal position to coordinate the various functions for specific applications, and this cluster of coordinators will be most effective within the business relationship management (BRM) function and process. BRM is the emerging best practice for providing a liaison between the ITO and business users.

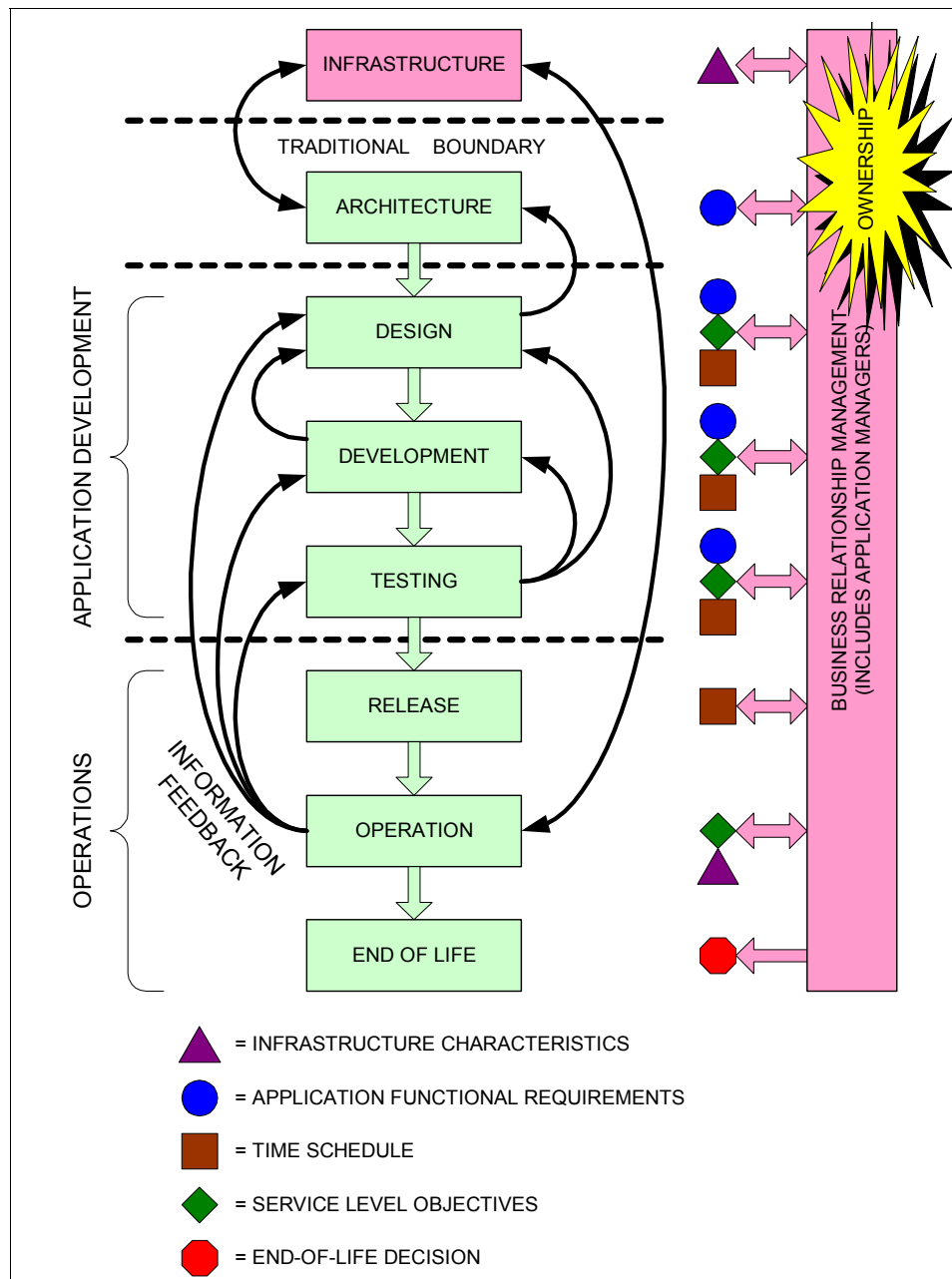
True application management requires feedback throughout the life cycle, as shown in Figure 1. This feedback includes requirements tuning from business users, optimization suggestions from operations, and infrastructure changes from infrastructure development and operations teams. Application developers must consider all this input as part of the ongoing engineering of their applications.

Bottom Line

IT organizations must develop comprehensive application management that eliminates the traditional barriers between development, operations, infrastructure, and other entities in the organization. A full life-cycle view is necessary to develop, deliver, and optimize IT services, and the application is the focal point of this evolution.

Business Impact: Structured IT engineering, centered on applications, is needed to enhance both IT services and the viability of the IT organization itself.

Figure 1 — The Application Management Life Cycle



Source: META Group